



European
Automobile
Manufacturers
Association

ACEA Position Paper

Aftermarket Flexfuel converters



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KEY MESSAGES

- a. Several problems would occur as a result of the conversion of a normal gasoline engine vehicle with a kit that would enable the engine to run on gasoline blends containing up to 85% of ethanol: there is a risk for the engine, for the environment and for consumer information.
- b. The manufacturer's guarantee cannot be maintained for vehicles that are converted in this way by an aftermarket kit supplier.

INTRODUCTION

Ethanol and gasoline combustion process are very similar, and many European countries already offer gasoline fuels containing different ranges of ethanol (eg E5 or E10 - for 5% or 10% of ethanol share by volume in the fuel). However, several vehicle models in Europe can run on both normal market gasoline and on E85 (up to 85% of ethanol). These vehicles are commonly known as 'Flexfuel'. Some companies across Europe are offering aftermarket devices (or kits) that convert normal gasoline engine vehicles into Flexfuel vehicles. These devices are mainly just electronic control units that claim to recalibrate the engine to run on E85 ('E85 black-box').

ACEA POSITION

When a vehicle manufacturer designs a vehicle to be specifically compatible with the use of E85, the design changes are quite significant compared to vehicles with a normal gasoline engine. For example, components such as cylinder heads, pistons, fuel injectors and oxygen sensors that are all exposed to fuel (or combusted fuel) will need better resistance to corrosion.

For both European countries and consumers, it may seem tempting to fit a simple E85 device on the aftermarket, as it could reduce energy dependency and allow the use of fuel that might be cheaper at the pump than normal gasoline.

However, ACEA deems that the sale and installation of these devices is quite dangerous, since it presents several risks in term of reliability, corrosion, service to the client, as well as the exhaust after-treatment system capability to maintain pollutant emission levels.

The E85 device will not be sufficient to prevent problems in terms of engine risk or pollutant emissions risk.

- Engine risk
 - Material compatibility: risk of a fuel leak, and subsequently of a fire;
 - Premature wear of the valve seats;
 - Premature wear in the injection system;
 - Poor cold start and potentially the need for heating injectors to make sure the engine will start (particularly in winter with E85);
 - Engine damage due to the fact that the thermal index of the spark plug is not adapted to Flexfuel vehicles.
 - Necessity to recommend a specific type of lubricant because not all lubricants are compatible with high blend ethanol fuels (E85).
- Pollutant emissions risk
 - Potential dysfunction of the canister function: risk of evaporation emissions;
 - Repetitive lightning of the OBD malfunction indicator;
 - The E85 device may control the fuel flow, the air-fuel ratio and/or the combustion, but the exhaust after-treatment system is not designed for E85 fuel. Hence, beyond the risk of evaporative emissions, other pollutant emissions are possible.
- Consumer information risk
 - The reference to Flexfuel on the vehicle registration document does not permit to distinguish vehicles originally designed for E85 from those that would be equipped with such an aftermarket E85 device.

CONCLUSION

The manufacturer's warranty issued for the vehicle as built (and according to other criteria a manufacturer may apply for validation of any warranty claim) is unlikely to be maintained in the case of vehicles converted to run on E85 by an aftermarket supplier of a simple E85 device.



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ABOUT ACEA

- ACEA represents the 15 Europe-based car, van, truck and bus manufacturers: BMW Group, DAF Trucks, Daimler, Fiat Chrysler Automobiles, Ford of Europe, Hyundai Motor Europe, Iveco, Jaguar Land Rover, Opel Group, PSA Group, Renault Group, Toyota Motor Europe, Volkswagen Group, Volvo Cars, and Volvo Group.
- More information can be found on www.acea.be or [@ACEA_eu](https://twitter.com/ACEA_eu).

ABOUT THE EU AUTOMOBILE INDUSTRY

- 12.6 million people – or 5.7% of the EU employed population – work in the sector.
- The 3.3 million jobs in automotive manufacturing represent almost 11% of EU manufacturing employment.
- Motor vehicles account for almost €396 billion in tax contributions in the EU15.
- The sector is also a key driver of knowledge and innovation, representing Europe's largest private contributor to R&D, with more than €50 billion invested annually.
- The automobile industry generates a trade surplus of about €90 billion for the EU.

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